REMARKS/ARGUMENTS

Claims 49-60 and 62-73 are pending. By this Amendment, claims 49, 60, 62, 64 and 65 are amended and claims 68-73 are added. Reconsideration in view of the above amendments and the following remarks is respectfully requested.

At the outset, Applicant appreciates the indication that claims 62-66 define patentable subject matter. By this Amendment, claims 62, 64 and 65 have been placed into independent form, thereby placing these claims in condition for allowance.

Claims 49-59 and 67 were rejected under 35 U.S.C. § 102(e) over Brodsky et al. This rejection is respectfully traversed.

Independent claim 49 is directed to a laser unit for providing markings on the surface of a continuous strip of metal. The laser unit comprises, *inter alia*, a beam generator configured to generate a beam of laser radiation to provide said markings in the metal. By this Amendment, the second occurrence of the term "configured" has been eliminated as it is unnecessary, and "for" has been added to the preamble. These amendments have been made for the purposes of clarity only and have no effect on the scope of the claim.

By contrast, Brodsky et al. does not teach or suggest a beam generator configured to generate a beam of laser radiation to provide said markings in a metal. Instead, Brodsky et al. is directed to a laser unit for use on a plastic article. See column 14, lines 28-30. Brodsky et al. teaches that the power output of the laser beam 42 is in the range of 5-20 watts or more and is capable of vaporizing a thin surface layer off a top surface 62

of article 60. Article 60, may for example, be an encapsulated integrated circuit chip comprising a plastic resin material with a filler such as carbon or the like. Column 10, lines 47-52. Accordingly, Brodsky et al. does not teach or suggest a beam generator configured to generate a beam of laser radiation to provide markings in a metal.

The recitation that the beam generator be configured to provide markings in metal is not merely an intended use. Because claims 49 and 60 recite that the beam generator is configured to generate a beam to provide markings in a metal, Brodsky et al., in order to anticipate the claims, must disclose a laser unit configured to generate a beam of laser radiation to provide markings in a metal. Brodsky et al. is not configured to mark a metal, especially in view of its express teachings that it is used for plastic or resin materials which utilize a much lower power output.

In addition, claim 49 specifies that the control unit is set, e.g., programmed, to control the laser unit to provide laser engraved markings at exact locations on the surface when the strip intermittently is in an immobilized condition. Brodsky et al. does not teach or suggest this subject matter. Moreover, for a prior art reference to anticipate claim 49, it must teach a control unit that is set to control the laser unit to provide laser engraved markings at exact locations on the surface when the strip intermittently is in an immobilized condition. Brodsky et al. does not teach a control unit that is set in such a manner.

This is not merely an intended use, as alleged in the Office Action. Rather, it is a feature of the claim that the control unit be set to control the laser unit in the recited

fashion. It is improper to ignore this feature as being a mere intended use since it is a positively recited element of the claim. The claim defines what the control unit is, i.e., set (not what it does). Even if the language is arguably functional, "... these potentially distinguishing features cannot simply be ignored." In re Echerd, 176 USPQ 321, 322 (CCPA 1973).

Similar remarks apply to several of the dependent claims which were also rejected under 35 U.S.C. § 102(e) over Brodsky et al. For example, Brodsky et al. does not teach that the processor is programmed to control a time period between subsequent pulses such that each pulse has sufficient energy to generate one of said pits (claim 52); that the processor is adapted to calculate positions of all the pits on the surface before operating the laser unit to produce the pattern (claim 53); that the processor is programmed to determine an optimum engraving path in which the pits should be produced in the surface to form the pattern, such that the distance between subsequent engraved pits is minimized (claim 54); or that the height of each of the characters is 1.42 mm (claim 67). Clearly, none of these claims relates to an intended use. Rather, each of the claims is a positively recited recitation that cannot be rejected based on anticipation over a reference (Brodsky et al.) which does not teach such features.

Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 49, 50, 53-60 and 67 were rejected under 35 U.S.C. § 103(a) over Miller et al. in view of Brodsky et al. This rejection is respectfully traversed.

In the Office Action, it is acknowledged that Miller et al. fails to teach or disclose a beam deflector arranged intermediate of the beam generator and the beam focuser. To make up for this deficiency, the Office Action relies on the teachings of Brodsky et al., which teaches a flat field lens positioned between a target 62 and a beam deflector.

However, Brodsky et al. specifically teaches against the use of YAG or CO_2 lasers. Instead, Brodsky et al. teaches a fiber laser marking system which is particularly distinguished from CO_2 and YAG laser marking systems. See the Abstract, column 6, lines 33-40 and 57-67, column 10, lines 60-65 and column 14, lines 17-22. In particular, it is stated that "an important feature" of the laser marking system according to Brodsky et al. is that it:

> "... provides a laser marker that provides marking power-on-demand whereas prior laser marking systems employing YAG lasers require continuous operation with interruption of the marking beam by a modulator, for example, by Q-switching, as well as bleed circuitry to bleed off residual power in the laser cavity prior to initiation of the next stroke or mark. In addition, those employing CO_2 marking lasers require continuous operation with pulse width modulation." Column 6, lines 33-41.

Such modulators are undesirable from the standpoint of stability of the produced output pulses and the reliability of the RF driver for the Q-switch, requiring frequent field service and provides bed cost to the marking system. They also reduce the power of resultant output marking beam or pulses by as much as 20% to 30%. Column 6, lines 57-67.

Further, Brodsky et al. indicates that an "important attribute" of the fiber marking laser is significantly reduced noise in the optical output from the fiber laser compared to

that of YAG laser marking systems. Also, the marking output is more uniform along the length of the marking stroke or vector compared to that from the YAG laser. The pulse-to-pulse noise on Q-switching in a YAG laser system is much noisier. Column 14, lines 17-23.

Accordingly, it is abundantly clear that Brodsky et al. teaches against the use of YAG and CO_2 lasers. On the other hand, the only example of a laser disclosed in Miller et al. is a YAG laser. See column 5, lines 49 and 50. Accordingly, Applicant respectfully submits that one of ordinary skill in the art would not have combined the teachings of Miller et al. with Brodsky et al. as Brodsky et al. teaches against the use of YAG and CO_2 lasers.

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Further, new claims 68-73 are presented for the Examiner's consideration. Claim 68 recites that the beam generator is selected from the group consisting of YAG and CO_2 laser beam generators. Brodsky et al. does not teach or suggest this subject matter, as it is directed to fiber laser units. While Miller et al. teaches YAG lasers, it is not combinable with Brodsky et al., for reasons described above. Claim 69 recites a modulator to produce laser pulses while claim 70 defines the modulator as a Q-switch. Brodsky et al. teaches that modulators, for example, Q-switches that are used by YAG lasers, are undesirable. In addition, systems employing CO_2 marking lasers require continuous operation with modulation, another form of a modulator. See column 6, lines 33-42.

Accordingly, Brodsky et al. does not teach or suggest the use of a modulator or Q-switch, as recited in claims 69 and 70, respectively. Claim 72 recites that an average power per pulse is at least 25 KW, whereas claim 73 recites that the peak pulse power is at least about 100 KW. By contrast, Brodsky et al. teaches that the power output is in the range of 5-20 watts (column 10, lines 47 and 48). Miller et al. teaches that the output is about 40-50 watts with about 80% of the power being delivered to the tab stock target. Column 5, lines 49-51.

In view of the above amendments and remarks, Applicant respectfully submits that all the claims are patentable and that the entire application is in condition for allowance.

Should the Examiner believe that anything further is desirable to place the application in better condition for allowance, he is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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